

WORK/QUALITY ASSURANCE PLAN

PROJECT NAME: SITE INSPECTION/GRAB SAMPLING

TDD Nos. R10-8408-03 THRU -05 and

R10-8408-09 THRU -41

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PROJECT CODE:

DATE INITIATED:

DATE APPROVED:

APPROVALS:

USEPA SF



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9/11/84

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1.0 PROJECT DESCRIPTION

1.1 Objective and Scope

Ecology and Environment, Inc.'s Field Investigation Team has been tasked under TDDs R10-8408-03 thru 05 and R10-8408-09 thru -41 to perform site inspections and ad hoc multi-media grab sampling at facilities in the states of Washington and Oregon. Depending upon the environmental setting and nature of the hazard, soil, sediment, surface water, and/or groundwater samples may be collected. The estimated level of effort is outlined in Table 1.1.

1.2 Data Usage

The analytical data will be used to aid in determining the need for comprehensive sampling at sites proven to have elevated levels of contaminants.

1.3 Sample Collection Design and Rationale

Tentative sampling locations and methods have been determined after review of available site files, site visits and discussions with facility personnel. Final determination will be made in the field by the team members and documented in field log books and the site inspection report.

2.0 PROJECT ORGANIZATION

Project Manager (E&E)	<u>Western Wash. (K. Drew), Central Wash (P. Evers), Eastern Wash. (T. Tobin), Oregon (T. Tobin, J. Pitts)</u>
Project Officer (EPA)	<u>J. Osborn</u>
QA Officer (EPA)	<u>W. Towns</u>
Laboratory Support (EPA)	<u>CLP, EPA X, FIT Field Screening</u>
Data Quality Review (E&E)	<u>J. Farr</u>

3.0 ANALYTICAL REQUIREMENTS

Site specific requirements and restrictive CLP allocations may require the use of non-CLP laboratories. Optional mechanisms anticipated include use of the EPA Region X Laboratory or field screening techniques using a Shimadzu gas chromatograph. CLP-destined samples will be either through RAS or SAS routes. Sample matrices may be either soil or water.

TABLE 1.1
PROJECTIONS OF SAMPLE LOADING FOR WASHINGTON/OREGON SITE INSPECTIONS

<u>Site</u>	<u>TDD</u>	<u>#Samples /Soil</u>	<u>#Samples /Water</u>	<u>Week of</u>
1. Pacific States Galvanizing	R10-8408-03	---	---	---
2. Harbor Oil	R10-8408-04	2	2	9/1
3. Dant and Russell	R10-8408-05	3	2	9/1
4. Lynden Airport	R10-8408-09	---	5	9/1
5. Tulalip Indian Reservation	R10-8408-10	---	3-4	9/2-8
6. Sunset Park/Tub Lake	R10-8408-11	0	0	---
7. N.W. Transformer	R10-8408-12	---	3-4	9/1
8. Brem Air Service	R10-8408-13	---	8	9/4
9. Ostrom Mushroom	R10-8408-14	4	4	9/1
10. Amanda Park	R10-8408-15	---	6	9/1
11. Olympic Testing	R10-8408-16	2	3	9/5
12. Spokane Steel Foundry	R10-8408-17	2	---	9/1
13. Indian Trails Landfill	R10-8408-18	---	2	9/1
14. Southside Landfill	R10-8408-19	---	2	9/1
15. Inland Foundry	R10-8408-20	---	---	9/1
16. Mica Landfill	R10-8408-21	---	2	9/1
17. Resource Recovery Corp.	R10-8408-22	---	3	9/12
18. Silver Mountain Mine	R10-8408-23	2	2	9/4
19. Nighthawk Mine Tailings	R10-8408-24	2	---	9/5
20. Peshastin Creek	R10-8408-25	2	---	9/13
21. Ellisford Landfill (SAS)	R10-8408-26	3	5	9/5-6
22. Koppers/Crown Zellerbach	R10-8408-27	3	---	9/1
23. Permapost	R10-8408-28	5	---	9/2-8
24. International Paper	R10-8408-29	4/6	---	9/2-8
25. Old Albany Landfill	R10-8408-30	3	1	9/2-8
26. Owens Corning	R10-8408-31	3	---	9/1
27. Nurnberg Scientific	R10-8408-32	---	2	9/9-15
28. Schultz Sanitation	R10-8408-33	3	---	9/9-15
29. J.H. Baxter	R10-8408-34	4/6	---	9/2-8
30. Nosler Bullets	R10-8408-35	3	---	9/9-15
31. Champion International	R10-8408-36	2	---	9/9-15
32. Norris Paint & Varnish	R10-8408-37	3	---	9/2-8
33. Salem Landfill	R10-8408-38	5	---	9/2-8
34. J.H. Baxter-Eugene	R10-8408-39	4/6	---	9/9-15
35. Day Island Sanitary Ldfl.	R10-8408-40	3	---	9/9-15
36. S. Willamette Sanitary Ldfl.	R10-8408-41	3	---	9/9-15

TABLE 3.1
TENTATIVE ANALYTICAL REQUIREMENTS

Parameter	Estimated Number of Samples*		Collection Frequency
	Soil	Water	
o Priority Pollutants	71	42	Grab
o Volatile Organics	--	--	Grab
o BNA	--	--	Grab
o Pesticides	--	--	Grab
o PCB	--	3	Grab
o Inorganic Series	--	--	Grab
o SAS Pesticides	4	4	Grab

*Including blanks

Glassware has been prepared by the CLP Bottle Repository network. Sample handling requirements are presented in Table 3.2

4.0 SAMPLING PROCEDURES

Sampling procedures will conform to those specified in EPA Region X Manual of Sampling Hazardous Materials (March, 1983), the Sample Management Office User's Guide to the EPA Contract Laboratory Program (July, 1984), the NEIC Policies and Procedures Manual (May, 1978), and the EPA methods for Investigating Sites Containing Hazardous Substances Technical Monographs (Draft, 1981). These documents specify sampling procedures and equipment for various sampling media and hazardous materials, sample container preparation, and sample preservation methods. Should conditions require any variation from these procedures the attached Sampling Alteration checklist will be used to describe changes from standard procedures. A schedule of tasks and products appears as Table 4.1.

Sampling sites will be selected to ensure that a representative portion of the sampling media is analyzed. Field sampling will be documented in Field Logbooks maintained by the Field Investigation Team members.

Medium and high concentration hazardous materials samples will not be preserved. No reagents or ice will be used when bottling samples that are suspected to be hazardous. These samples must be packaged and

SAMPLING ALTERATION CHECKLIST

Site Name: _____ TDD No. _____

Material to be Sampled: _____

Measurement Parameter: _____

Standard Procedure for Sample Collection or Analysis: _____

Reference: _____

Variation from Standard Procedure: _____

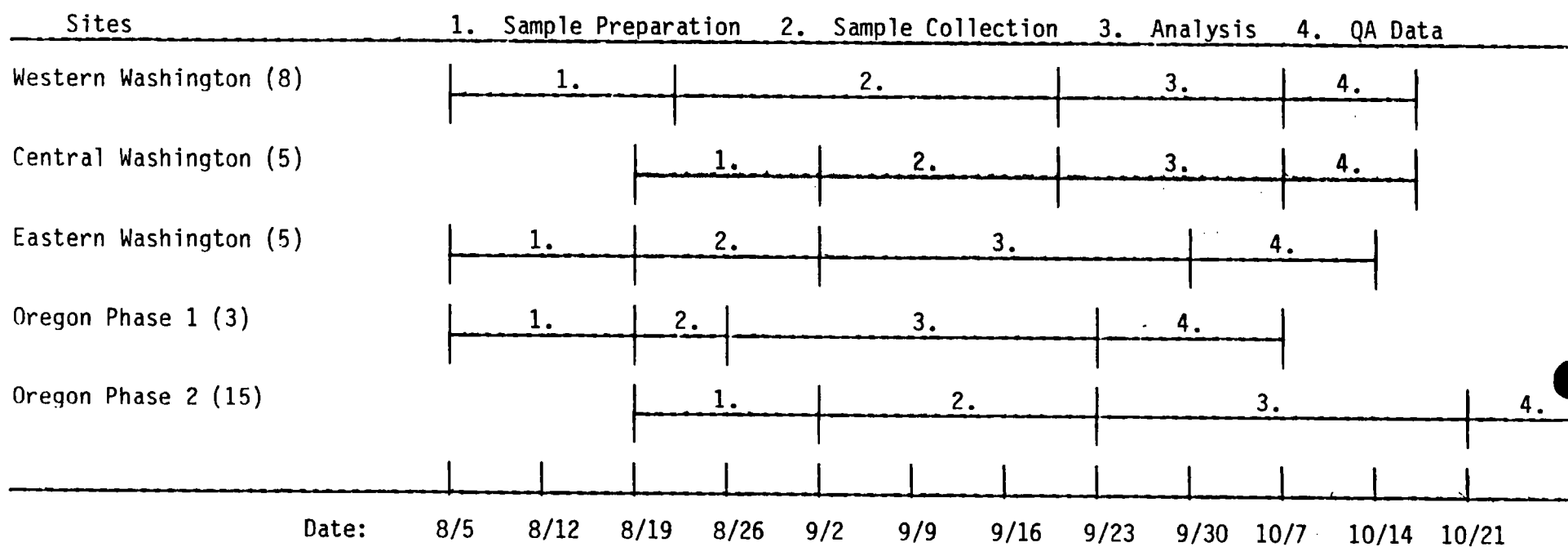
Reason for Variation: _____

Resultant Change in Field Sampling Procedure: _____

Special Equipment, Material, or Personnel Required: _____

Investigator's Name: _____ Date: _____

TABLE 4.1
SCHEDULE OF TASKS AND PRODUCTS



labeled according to Department of Transportation regulations and shipped immediately to the receiving laboratory. Information on preserving environmental samples (collected offsite or where concentrations are reduced by dilution) is presented in the Region X Manual for Sampling Hazardous Materials (March, 1983).

4.1 Soils/Sediments

Soil/sediment samples will be either composite or discrete grab samples collected from areas of obvious or suspected contamination. Disposable stainless-steel trowels, spoons, scoops, and mixing containers will be used for surface soils. Shallow subsurface samples will be collected with a hand auger from cuttings at the appropriate depth intervals.

4.2 Surface Water/Leachate

Surface water/leachate samples will be collected in rinsed/ prepared containers or glassware and decanted into appropriately sized sample containers. Jars attached to extension poles or simply submerging the collection vessels under the water will be the predominant collection methods.

4.3 Groundwater

In wells with existing downhole pumps an estimated 3-5 well volumes will be removed prior to collecting a sample for the discharge port. Efforts will be made to obtain the samples upstream of the pressure tank in domestic wells. Wells without downhole pumps will be bailed by hand with a top-filling teflon bailer until it is reasonably assumed that groundwater representative of the aquifer can be obtained. In other locations a non-contact bladder-type pump will be used. The sample will be decanted into the appropriate sample containers.

5.0 SAMPLE CUSTODY PROCEDURES

Although samples collected during these Site Inspections are primarily to be used as screening tools to determine the need for additional sampling, the potential evidentiary nature of the samples requires that the possession of samples must be traceable from the time the samples are collected until they are introduced as evidence in enforcement proceedings. The Region X Manual for Sampling Hazardous Materials (March, 1983) specifies the distribution and use of logbooks, sample tags, and chain-of-custody records. Laboratory documentation will follow procedures outlined in the SMO User's Guide to the EPA Contract Laboratory Program (July, 1984). Examples of tags, labels, and standardized reporting forms are found in the Region X Manual for Sampling Hazardous Materials (March, 1983).

6.0 CALIBRATION PROCEDURES, MAINTENANCE AND FREQUENCY

No instruments will be used during sample collection. Shimadzu gas chromatograph calibration and operation will be consistent with Shimadzu Corporation Manuals for Gas Chromatograph GC-Mini 2 with Flame Ionization and Electron Capture Detector.

7.0 ANALYTICAL PROCEDURES

The EPA Routine Analytical Services (RAS) program provides laboratory services for uniform and high volume analysis of samples collected during hazardous materials incidents. Laboratories participating in this program are under contract to analyze specified types of samples in accordance with standardized protocols and delivery schedules (SMO User's Guide to the EPA Contract Laboratory Program, July, 1984). As new analytical requirements are identified, the RAS will obtain laboratory services to support the analysis of additional types of samples as well as increasing numbers of samples collected under Superfund and other program activities.

The Special Analytical Services (SAS) program is designed to complement the Routine Analytical Services program by providing the capability for specialized or custom analytical requirements. Sample analyses under the SAS program are performed by laboratory currently in the Contract Laboratory Program (CLP) and are subject to the same quality assurance and document control requirements stipulated for standardized analyses.

The EPA Region X Laboratory utilizes EPA Test Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater (EPA-600/4-82-057) and Test Methods for Evaluating Solid Wastes (EPA SW 846-1980) following SMO guidelines for data quality assurance and document control.

Analytical procedures for operation of the Shimadzu GC for field screening PCB-contaminated water and soil samples are reported under E&E TDD No. R10-8402-09.

8.0 DATA REDUCTION, VALIDATION, AND REPORTING

All samples collected in conjunction with the Site Inspections will be promptly packaged and shipped according to Department of Transportation regulations to a contract laboratory specified by the EPA for analytical services. By utilizing program procedures and resources, all sampling logistics, tracking documentation and final data formats will be consistent and parallel. Exceptions to this mechanism may arise if space is not available within the CLP to handle the proposed load. In this event, samples will be preserved by the appropriate collection preservation technique until the analyses can be run.

All samples will be accompanied by a Field Data Sheet and a copy of the Chain-of-Custody record. Samples destined for the EPA lab will also have Analysis Request forms. Forms will be sealed inside ziplock bags and taped to the inside lid of the shipping container. In addition, field notes and Field Data sheets will be used to document sampling activity. All sample analyses will be provided to J.E. Osborn FIT RPO, Field Operations Branch, EPA Region X. Summary reports will document sampling methods, locations, and site-specific requirements.

9.0 INTERNAL QUALITY CONTROL CHECKS

The Region X Field Investigation Team will follow guidelines established in the Region X Manual for Sampling Hazardous Materials (March, 1983) and the EPA Handbook for Analytical Quality Control in Waste and Wastewater Laboratories (March, 1979), regarding the responsibilities of field personnel for the collection of quality control samples. Internal quality control within the laboratory will follow recommendations of the EPA handbook referenced above and the SMO User's Guide to the EPA Contract Laboratory Program (July, 1984).

Duplicate field samples, transfer blanks, transport blanks, and background samples will be collected as necessary to verify sample quality. Spiking of samples to measure changes during shipping or to assess laboratory accuracy is not anticipated. Sample blanks will be prepared routinely and used to measure contamination of sample containers during shipping and handling.

Preservatives will generally not be used for inorganic parameters. Refrigeration of samples will be used for soils and organic parameter water samples where conditions and sample characteristics permit.

10.0 PERFORMANCE AND SYSTEM AUDITS

Regional EPA laboratories or contract facilities used by FIT personnel are required to take part in a series of performance and system audits conducted by the National Enforcement Investigations Center (NEIC). Laboratory quality control data and performance evaluations will be submitted along with analytical results for assessment by program reviewers.

Performance and system audits for FIT sampling operations will consist of onsite reviews of field quality assurance systems and equipment for sampling, calibration, and measurement consistent with the Zone II REM/FIT Quality Assurance Manual (Contract No. 68-01-6682). The program Quality Assurance Coordinator will develop and conduct system audits based on the approved project plan. Audits will follow guidelines provided by the NEIC for performing audits of field activities.

11.0 OBJECTIVES AND ROUTINE PROCEDURES USED TO ASSESS DATA PRECISION, ACCURACY, AND COMPLETENESS

Measurement parameters vary widely depending upon the site, the type and concentration of material, and the media to be sampled. Precision and accuracy will be evaluated by sampling teams and QA data reviewers. In all instances representativeness and comparability of data will be assured following the sampling procedures detailed in Region X Manual for Sampling Hazardous Materials (March, 1983) and the Zone II REM/FIT Quality Assurance Manual.

Because the sampling objectives are screening in nature and the grab sampling is limited in scope it is not felt that statistical analyses or significance testing will be required. Quality assured analytical results will be compared to established guidelines, standards, and criteria for interpretation.

12.0 CORRECTIVE ACTION

Corrective action will be taken by the Field Investigation Team when data are found to be outside the predetermined limits of acceptability. In most instances, corrective actions will be initiated by the program Quality Assurance Coordinator. Prior to undertaking corrective actions, remedial plans should be reviewed and approved by the Project Manager. The EPA Region X Quality Assurance Officer may be consulted if means of correcting data quality problems are not clear.

Corrective actions may also result from field performance and systems audits. If audits reveal problems in maintenance of data quality; the person responsible for initiating the actions, the actions themselves, and the individual responsible for approval will be identified.

13.0 QUALITY ASSURANCE REPORTS

Reports to J.E. Osborn, FIT RPO, regarding the status of quality assurance activities for FIT sampling will be submitted on an as requested basis throughout the Site Inspections. Site Inspection reports will contain current information regarding data accuracy, precision, and completeness for specific sites. Results of systems and performance audits will be presented along with significant quality assurance problems that arise during the project period in an independent report, if necessary. Recommended solutions to the problems and corrective actions will be discussed. Quality assurance reports will be prepared by the project's respective Project Managers.